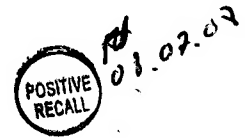


Date: Friday, 04/04/2008 9:52:53 AM
 User: Julie Lecocq

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : BK117 SKIDTUBE ASSEMBLY
 Job Number : 38387
 Estimate Number : 12899
 P.O. Number :
 This Issue : 04/04/2008 S.O. No. :
 Prsht Rev. : NC
 First Issue : 04/04/2008 Type : LANDING GEAR
 Previous Run : 37569
 Part Number : D117762011
 Drawing Number : N/A
 Project Number : N/A
 Drawing Revision : A
 Material :
 Due Date : 25/04/2008 Qty: 1 Um: Each

Written By :
 Checked & Approved By : JD 08.04.4
 Comment : Est Rev:A 07.06.11 New Issue EC
 Est Rev:B 08-02-22 change to revA DD verified by:



Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 DC DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Photocopy bluefile & type labels per PPP ~~D135-754-011~~ CHG001

D117-762-011

S 08/07/03

2.0 38387A BK117 SKIDTUBE ASSEMBLY



Comment: Sub-Component BK117 SKIDTUBE ASSEMBLY

Batch: 38387

PC 8/7/3 (1)

3.0 PACKAGING 1 PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

4.0 D35121 WEARPLATE



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

WEARPLATE

Batch: B36180

PC

5.0 AN960D10L Washer



Comment: Qty.: 8.0000 Each(s)/Unit Total: 8.0000 Each(s)

Washer

Batch: M10 4845

PC 8/4/8 (1)

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 04/04/2008 9:52:53 AM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38387

Part Number: D117762011

Job Number:



Seq. #: Machine Or Operation: Description :

6.0 AN3C4A BOLT



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

BOLT

BATCH: M107376

7.0 AN451A Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Bolt

BATCH: M106662

8.0 D2972 Bushing



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Bushing

BATCH: B14103

9.0 MS21042L4 Nut



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Nut

BATCH: M106825

10.0 QC4 INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

POSITIVE
RECALL
08/07/08

11.0 PACKAGING 1 PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D135-751-011

Location:

PPP Rev:

12.0 QC21 FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

POSITIVE RECALL

EFFECTIVE 08/07/08 AUTH U

RELEASED 08/07/08 DATE 08/07/08

Job Completion



B38387A

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

32.9 PARTS LIST

Item	Qty -011	Qty -041	Qty -043	Qty -101	Part Number	Description
	X				D135-751-011	SKIDTUBE INSTALLATION
	1	X			D135-751-041	REPLACEMENT SKIDTUBE
			X		D135-751-043	WEARPLATE KIT
				X	D135-751-101	SKIDTUBE EXTENSION KIT
1		1			D3507-041	SKIDTUBE ASSEMBLY
2	4				**BRS8-96/48SZ-M8-W2	CLAMP
3	8				**LN9038-08032	SCREW
4		1			*D2965	CAP
5		1			*D2965-3	CAP
6		2			***AELS-1032-130	INSERT
7		2			***AELS-1032-225	INSERT
8		2			*AN3C5A	BOLT
9		2			*AN960C10L	WASHER
10		2			*AN526C1032-10	SCREW
20A		1	1		*D3508-1	WEARPLATE
20B		1	1		*D3558-1	GASKET
21A		1	1		*D3508-3	WEARPLATE
21B		1	1		*D3558-3	GASKET
22A		1	1		*D3508-5	WEARPLATE
22B		1	1		*D3558-5	GASKET
23A		1	1		*D3508-7	WEARPLATE
23B		1	1		*D3558-7	GASKET
24		38			*AELS-1032-130	INSERT
25	8	30	38		*AN3C4A	BOLT
26	8	30	38		*AN960C10L	WASHER
27	2		2		D3512-1	WEARPLATE
30		1			*AELS-1032-225	INSERT
31		1			*AN3C4A	BOLT
32		1			*AN960C10L	WASHER
40		4			*D3492-041	PLUG ASSEMBLY
41		4			***NAS1611-010	O-RING
42		2			*D3492-047	PLUG ASSEMBLY
43		2			***NAS1611-007	O-RING
44		4			*D3506-1	DOUBLER
45		8			*MS20601AD4W3	RIVET
46		2			*D3506-3	DOUBLER
47		4			*MS20601AD4W3	RIVET
48		4			*D3492-043	PLUG ASSEMBLY
49		4			***NAS1611-013	O-RING
50				1	D3510-041	INSERT ASSEMBLY
51				2	***AELS-1032-130	INSERT
52				6	***AELS-1032-225	INSERT
53				2	***ALS4-428-165	INSERT
54				2	AN4C7A	BOLT
55				2	AN960C416L	WASHER
56				2	AN3C4A	BOLT
57				8	AN3C7A	BOLT
58				10	AN960C10L	WASHER

* PART IS INCLUDED WITH D3507-041 SKIDTUBE ASSEMBLY
 ** TO BE SUPPLIED BY CUSTOMER, LISTED AS REFERENCE ONLY
 *** DENOTES PART IS INCLUDED WITH ASSEMBLY ABOVE

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WITHOUT NOTICE
 WORK ORDER

NO. 38387

32-00-00

5.0 PARTS LIST

5.1 D117-762-011 Skidtube Parts List

Item	Qty -011	Qty -041	Part Number	Description
	X		D117-762-011	SKIDTUBE INSTALLATION
	1	X	D117-762-041	REPLACEMENT SKIDTUBE
1		1	D3582-041	SKIDTUBE ASSEMBLY
2	2		**1121-51002	SKID SHOE
3	2		**1121-51102	CLAMPING RING
4	8		**LN9380M8X45	HEXAGON BOLT
5	8		**LN9023A8-1.4544.9	LOCKING WASHER
6	8		**LN9025-0815K	WASHER (OR LN9025-0815L)
10		1	*D2965	CAP
11		2	***AELS-1032-225	INSERT
12		2	*AN3C5A	BOLT
13		2	*AN960C10L	WASHER
20A		1	*D3508-9	WEARPLATE
20B		1	*D3558-9	GASKET
21A		1	*D3508-3	WEARPLATE
21B		1	*D3558-3	GASKET
22A		1	*D3508-11	WEARPLATE
22B		1	*D3558-11	GASKET
23A		1	*D3508-13	WEARPLATE
23B		1	*D3558-13	GASKET
24		36	*AELS-1032-130	INSERT
25	8	28	*AN3C4A	BOLT
26	8	28	*AN960C10L	WASHER
27	2		D3512-1	WEARPLATE
30		2	*AELS-1032-130	INSERT
31		2	*AN4-4A	BOLT
32		2	*AN960JD416L	WASHER
40		2	*D3492-049	PLUG ASSEMBLY
41		2	***NAS1611-016	O-RING
42		2	*D3492-051	PLUG ASSEMBLY
43		2	***NAS1611-015	O-RING
44		6	*D3492-053	PLUG ASSEMBLY
45		6	***NAS1611-012	O-RING
50	2		AN4-51A	BOLT
51	4		D2972	BUSHING
52	2		MS21042L4	NUT (OR MS21042-4)

* PART IS INCLUDED WITH D3582-041 SKIDTUBE ASSEMBLY

** TO BE SUPPLIED BY CUSTOMER, LISTED AS REFERENCE ONLY

*** DENOTES PART IS INCLUDED WITH ASSEMBLY ABOVE

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Revision: A

Date: 07.04.27

Date: Friday, 04/04/2008 9:21:07 AM
User: Jille Lecocq

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services
Job Number : 38387A
Estimate Number : 12898
P.O. Number :
This Issue : 04/04/2008 S.O. No. :
Prsht Rev. : NC
First Issue : / / Type : LANDING GEAR
Previous Run : 37569A
Written By :
Checked & Approved By : JV 08.044
Comment : Est Rev:A 07.06.11 New Issue EC
Prototype for engineering use only (LG0005-32910)
Est Rev:B 08-02-22 change to revA as per dwg DD verified
by:

Drawing Name : BK117 SKIDTUBE ASSEMBLY
Part Number : D117762041
Drawing Number : D3582 REV A
Project Number : N/A
Drawing Revision : A
Material :
Due Date : 25/04/2008 Qty: 1 Um: Each

POSITIVE RECALL 08.02.08

Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 DC DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Photocopy bluefile & type labels per PPP D117-762-041 CHG001

N/A

2.0 D2962150 3.540 Outer Tube, Extrut



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2962-150 Extrusion

28672 SL 8-4-7

3.0 SKIDTUBES 1 SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Determine square end of tube and deburr

2-Drill #30 pilot holes using DT8678. Do not open holes.

3- Deburr holes.

SL 8-4-7

4.0 BENDING BENDING MACHINE - SKIDTUBES



Comment: BENDING MACHINE

Bend tube as per program on CNC Bender and Dwg D3582. Use 5/16" locator pin on buggy "A".

8-4-8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 04/04/2008 9:21:07 AM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38387A

Part Number: D117762041

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

- 1-Cut Fwd end of the tube using DT8185 *EL 8-4-8*
 - 2-Cut Aft end at VC using DT8185
 - 3-Deburr ends
 - 4-Drill Aft Cap holes using DT8678 ***DO NOT OPEN AFT CAP HOLE***
 - 5-Locate DT 8973 & Drill Ground wire hole on top of Tube.
 - 6-Install 3/16 cleco in Ground wire hole ,then drill all X-Bolt holes using 3/16" drill.
 - 7-Drill pilot holes for wearplates using DT8974
 - 8-Open wearplate holes and ground wire holes to Ø19/64" (0.297") as per Dwg D3582
 - 9-Open Aft Cap holes using .209" drill.
 - 10-Deburr holes.
- SL 8-4-9*

6.0

D2964

Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Cap

Batch: *814101 BE 08/04/09*

7.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Weld fwd cap D2964 per dwg D3582 and QSI 004

A/R AL ROD

Batch: *M 106830 / M 107263 BE 08/04/09*

2-Grind flush

DP 8-4-9

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 04/04/2008 9:21:07 AM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38387A

Part Number: D117762041

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

8.0	QC10	VISUAL INSPECTION OF GROUND WELDS
-----	------	-----------------------------------



Comment: VISUAL INSPECTION OF GROUND WELDS

PD 08-04-09 / 208/04/09

9.0	QC5	INSPECT WORK TO CURRENT STEP
-----	-----	------------------------------



Comment: INSPECT WORK TO CURRENT STEP

204/07/09

10.0	HAND FINISHING1	HAND FINISHING RESOURCE #1
------	-----------------	----------------------------



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

DP 8-4-10

11.0	QC3	INSPECT POWDER COAT/CHEMICAL CONVERSION
------	-----	-----------------------------------------



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

BE 08/04/10

12.0	D2971	Cross Bolt Spacer
------	-------	-------------------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Cross Bolt Spacer
batch

33221

BE 08/04/10

13.0	D2973	Cross Bolt Spacer
------	-------	-------------------



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Cross Bolt Spacer
Batch:

314636

BE 08/04/11

14.0	D36621	SPACER
------	--------	--------



Comment: Qty.: 3.0000 Each(s)/Unit Total : 3.0000 Each(s)

SPACER
batch

337189

BE 08/04/11

15.0	D36623	SPACER
------	--------	--------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

SPACER
batch

337190

BE 08/04/11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 04/04/2008 9:21:07 AM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38387A

Part Number: D117762041

Job Number:



Seq. #:

Machine Or Operation:

Description :

16.0

D35841

WEB



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)
WEB *B38411*

DP 8-4-10

17.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Open X-Bolt holes to .750"(4Places) as per Dwg D3582, section B-B

2-Counter Sink X-BOLT holes as per Dwg D3582

3-Deburr and blow out chips from inside of tube.

4-Bond web as per Dwg D3582 & QSI 015

A/R 241 Sike Flex Batch: *M107397*

Exp Date: *8-10-30*

DP 8-4-10

5-Weld x-bolt spacers(D2973) as per Dwg D3582 section B-B.

A/R AL ROD Batch: *M107263*

BE 8-4-11

6-Grind welds flush

SL 8-4-11

Tools: E

18.0

QC10

VISUAL INSPECTION OF GROUND WELDS



Comment: VISUAL INSPECTION OF GROUND WELDS

PD 08-04-01/ S 08-04-11

19.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S 08-04-11

20.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

PRESSURE WASH

BR 08-04-15
BR 08-04-15

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 04/04/2008 9:21:07 AM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38387A

Part Number: D117762041

Job Number:



Seq. #:

Machine Or Operation:

Description :

21.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



(IX)

Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

M-L 08/04/15

22.0

AELS1032130

INSERT



Comment: Qty.: 36.0000 Each(s)/Unit Total : 36.0000 Each(s)

Insert

Batch:

M105855

M-L

23.0

ALS4428165

Inserts



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Inserts

batch

M6989

***same as ALS7-428-165 QSI 0017 ***

M-L

24.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



(IX)

Comment: HAND FINISHING RESOURCE #1

Install Wearplate & Ground Wire inserts as per Dwg D3582.

M-L 08/04/15

25.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

Inspect Inserts

08/04/15

26.0

D2965

Cap



*

Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Cap

Batch:

B38605

M-L

27.0

D35083

WEARPLATE



(IX)

Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEARPLATE

Batch:

B31196

M-L 08/04/15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 04/04/2008 9:21:07 AM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38387A

Part Number: D117762041

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

28.0	D35089	WEARPLATE
------	--------	-----------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEARPLATE

Batch:

B36417

M. L.

29.0	D350811	WEARPLATE
------	---------	-----------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Batch:

WEARPLATE

B36415

M. L.

30.0	D350813	WEARPLATE
------	---------	-----------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEARPLATE

Batch:

B36416

M. L.

31.0	D35583	GASKET
------	--------	--------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

GASKET

Batch:

B29999

M. L.

32.0	D35589	GASKET
------	--------	--------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

GASKET

Batch:

B36420

M. L.

33.0	D355811	GASKET
------	---------	--------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

GASKET

Batch:

B36419

M. L.

34.0	D355813	GASKET
------	---------	--------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

GASKET

Batch:

B36418

M. L.

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 04/04/2008 9:21:07 AM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38387A

Part Number: D117762041

Job Number:



Seq. #:

Machine Or Operation:

Description :

35.0

AN3C4A

BOLT



Comment: Qty.: 28.0000 Each(s)/Unit Total : 28.0000 Each(s)

BOLT

Batch:

M107376

m-l

36.0

AN3C5A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Bolt

Batch:

M106780

m-l

37.0

AN44A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Bolt

batch

M161291

m-l

38.0

AN960C10L

washer



Comment: Qty.: 28.0000 Each(s)/Unit Total : 28.0000 Each(s)

washer

Batch:

M107376

m-l

39.0

AN960JD10L

Washer



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Washer

batch

M104885

m-l

40.0

AN960JD416L

Washer



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Washer

batch

M107008

m-l

41.0

D3492049

PLUG ASSEMBLY



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

PLUG ASSEMBLY

batch

B37288

m-l 08/04/15

(IX)

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 04/04/2008 9:21:07 AM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38387A

Part Number: D117762041

Job Number:



Seq. #:

Machine Or Operation:

Description :

42.0

D3492051

PLUG ASSEMBLY



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

PLUG ASSEMBLY

batch

B37289

m-h

43.0

D3492053

PLUG ASSEMBLY



Comment: Qty.: 6.0000 Each(s)/Unit Total: 6.0000 Each(s)

PLUG ASSEMBLY

batch

B37290

m-h

44.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

1-Inspect for Foreign objects

2-Install Aft cap as per Dwg D3582, Detail "C"

A/R 241 Sika Flex Batch:

Exp Date:

M107397

08/10

3-Install Wearplates as per Dwg D3582,

Note:Install Bolt and washer on Ground Wire inserts on top of tube see section D-D of dwg D3582

*****Do not install bolts where indicated on Dwg(Note #6)*****

A/R 241 Sika Flex Batch:

Exp Date:

M107397

08/10

m-h 08/04/16

4- Wing Walk as per Dwg D3043 and QSR 005 4.4

M106894

m-h

08/04/17 (X)

45.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP



08/04/17 (X)

08/04/03

46.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D117-762-041

Location:

PPP Rev:

PPP 38387

08/17/3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 04/04/2008 9:21:07 AM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38387A

Part Number: D117762041

Job Number:



Seq. #:

Machine Or Operation:

Description :

47.0

QC21

FINAL INSPECTION/W/O RELEASE



08/07/08 *[Signature]*

Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



POSITIVE RECALL
EFFECTIVE 08-01-07 AUTH u
RELEASED u DATE 03.07.07

u 08.07.07

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

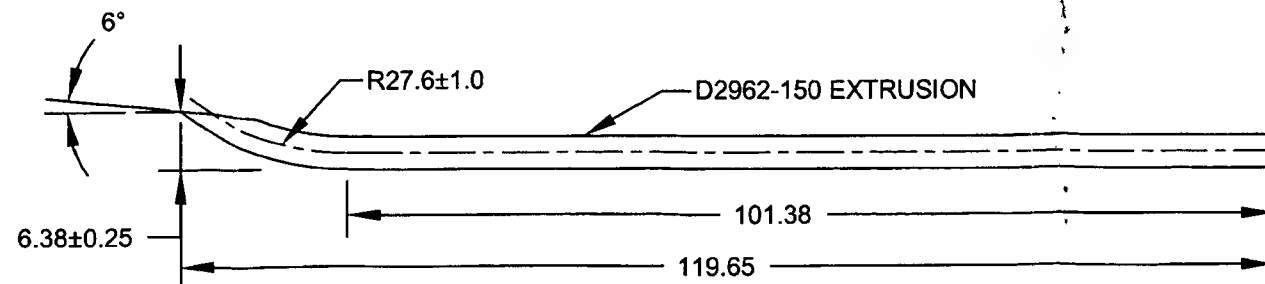
NOTE: Date & initial all entries

PARTS LIST FOR D3582-041 SKIDTUBE ASSEMBLY

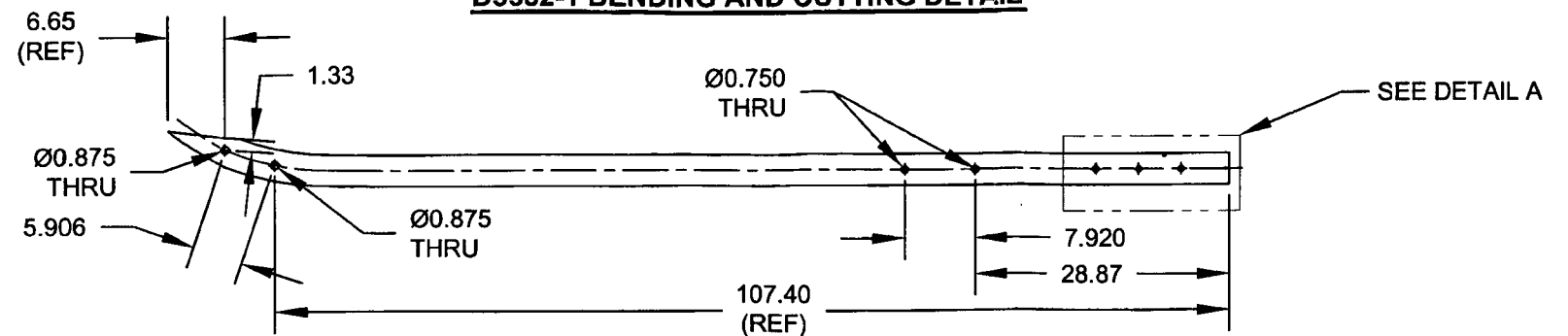
Qty	Part Number	Description
X	D3582-041	SKIDTUBE ASSEMBLY
1	D2962-150	EXTRUSION
1	D2964	CAP
1	D2965	CAP
1	D2971	CROSS BOLT SPACER
2	D2973	CROSS BOLT SPACER
2	D3492-049	PLUG ASSEMBLY
2	D3492-051	PLUG ASSEMBLY
6	D3492-053	PLUG ASSEMBLY
1	D3508-3	WEARPLATE
1	D3508-9	WEARPLATE
1	D3508-11	WEARPLATE
1	D3508-13	WEARPLATE
1	D3558-3	GASKET
1	D3558-9	GASKET
1	D3558-11	GASKET
1	D3558-13	GASKET
1	D3584-1	WEB
3	D3662-1	CROSS BOLT SPACER
1	D3662-3	CROSS BOLT SPACER
36	AELS-1032-130	INSERT
2	ALS7-428-165	INSERT
28	AN3C4A	BOLT
2	AN3-5A	BOLT
2	AN4-4A	BOLT
28	AN960C10L	WASHER
2	AN960JD10L	WASHER
2	AN960JD416L	WASHER

GENERAL NOTES:

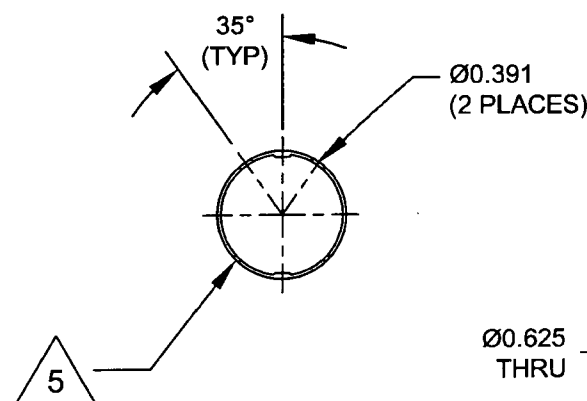
- ALL DIMENSIONS ARE IN INCHES
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- WELDING TO BE DONE PER DART QSI 004.
- INSERT D3584-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 AFTER BENDING.
- USE DART DRILL TEMPLATE DT8900 TO LOCATE AND DRILL Ø0.297 HOLES (36 PLACES) FOR WEARSHOE INSERTS. INSTALL AELS-1032-130 PER SECTION G-G (36 PLACES) AFTER FINISH. SEAL WEARPLATE BOLTS WITH SIKAFLEX-241/-291.
- DO NOT INSTALL AN3C4A BOLTS AND AN960C10L WASHERS IN INDICATED LOCATIONS.
- FINISH:
 - CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING D3584-1 WEB.
 - POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3.
 - ANTI-SKID PAINT AS INDICATED TO 1.00 ABOVE CENTER LINE PER DART QSI 005 4.4



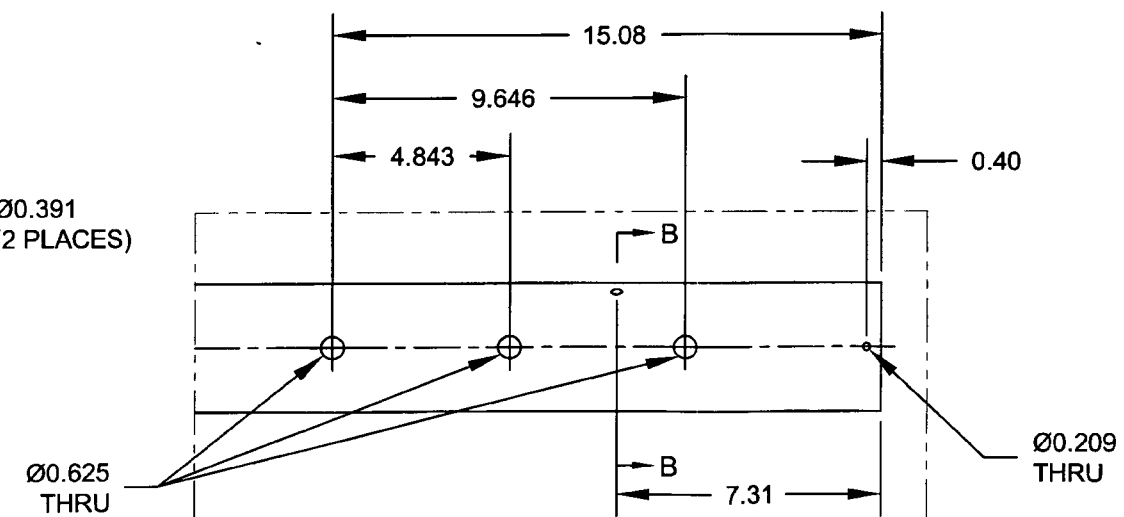
D3582-1 BENDING AND CUTTING DETAIL



D3582-1 DRILLING DETAIL



SECTION B-B
SCALE 1:5



DETAIL A
SCALE 1:5

RELEASED
07.11.22

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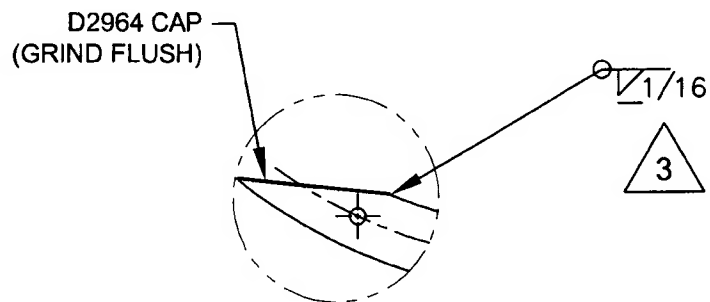
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SUBJECT TO AMENDMENT
WITHOUT NOTICE

WORK ORDER

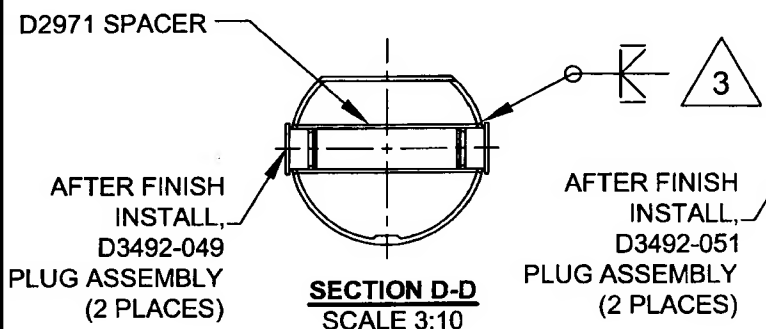
NO. 38381A

A	NEW ISSUE	PH	07.06.08
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	PH	PORT HADLOCK, WA	
CHECKED	PH	DRAWING NO.	REV. A
MFG. APPR.	PH	D3582	SHEET 1 OF 2
APPROVED	PH	TITLE	SCALE
DE APPR.	PH	BK 117 SKIDTUBE ASSEMBLY	1:20
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8 7 6 5 4 3 2 1



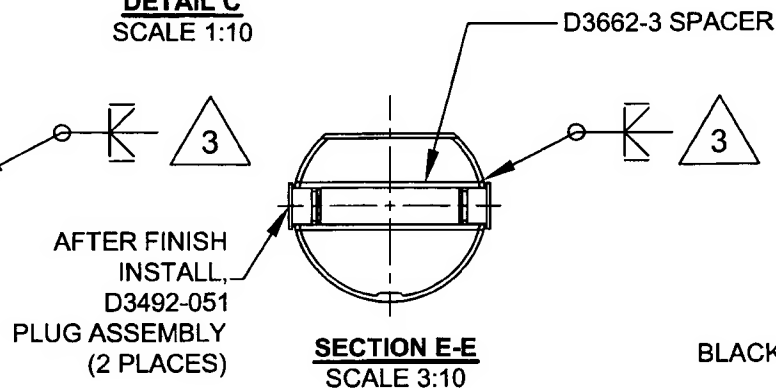
DETAIL C
SCALE 1:10



SECTION D-D NOTES

AFTER BENDING AND DRILLING ASSEMBLY PERFORM THE FOLLOWING:

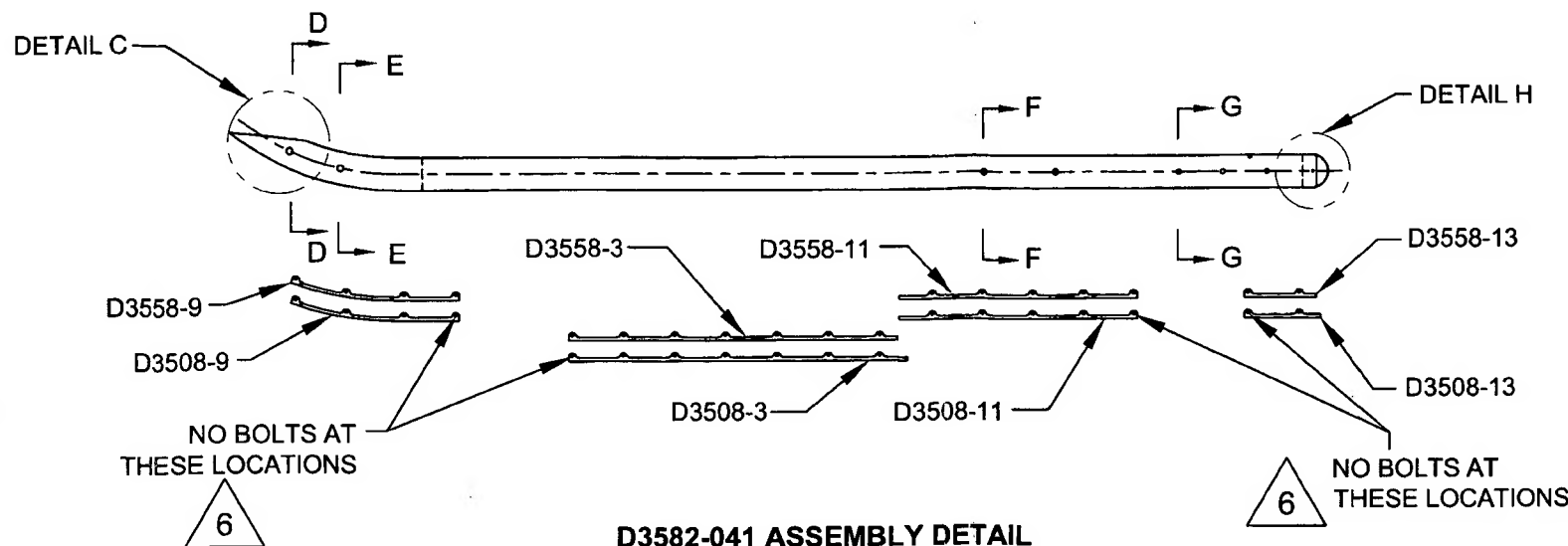
1. CHAMFER HOLE 0.030 x 45°
2. INSERT D2971 SPACER
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.750 DRILL TO REMOVE SPILL OVER
5. AFTER FINISH, INSTALL D3492-049 PLUG ASSEMBLY (2 PLACES)



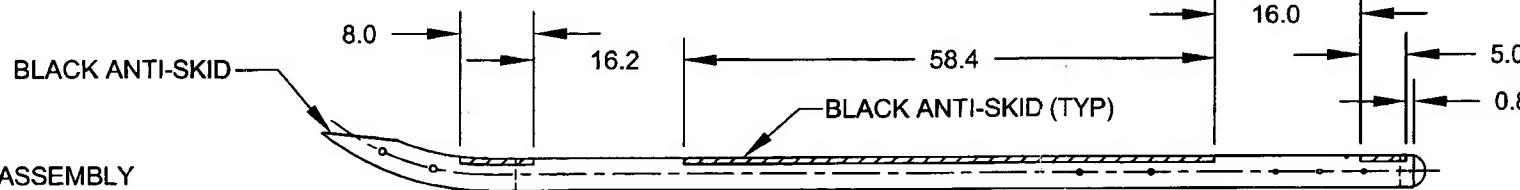
SECTION E-E NOTES

AFTER BENDING AND DRILLING ASSEMBLY PERFORM THE FOLLOWING:

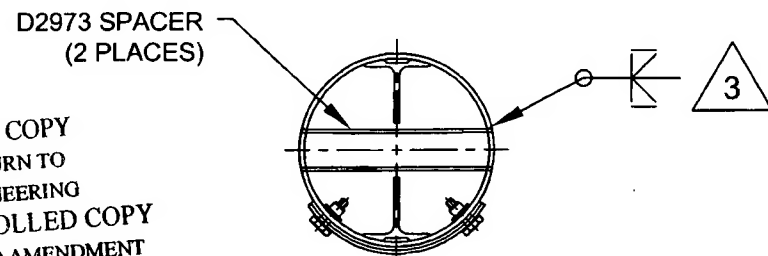
1. CHAMFER HOLE 0.030 x 45°
2. INSERT D3662-3 SPACER
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.672 DRILL TO REMOVE SPILL OVER
5. AFTER FINISH, INSTALL D3492-051 PLUG ASSEMBLY (2 PLACES)



D3582-041 ASSEMBLY DETAIL



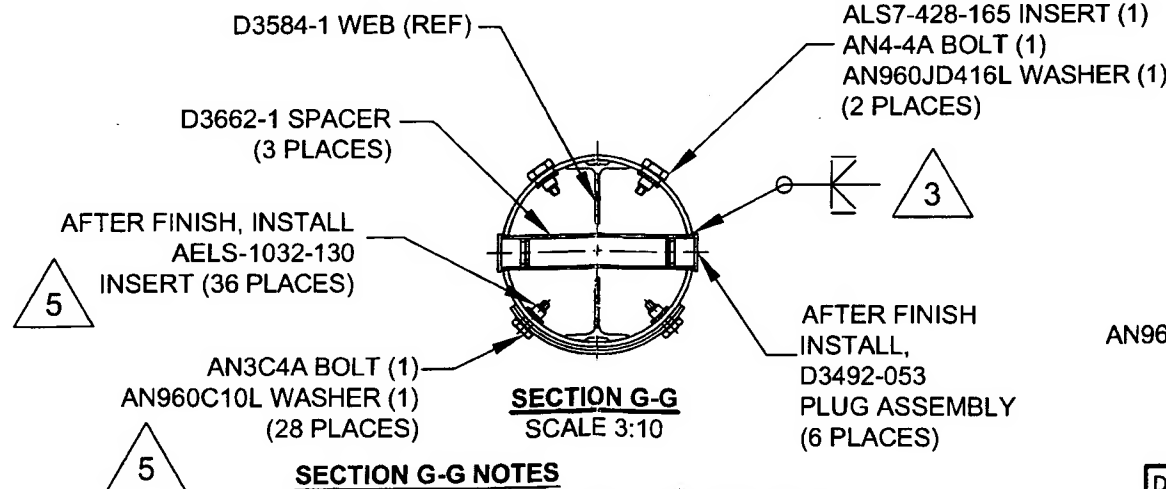
D3582-041 BLACK ANTI-SKID DETAIL



SECTION F-F NOTES

AFTER BENDING AND DRILLING ASSEMBLY PERFORM THE FOLLOWING:

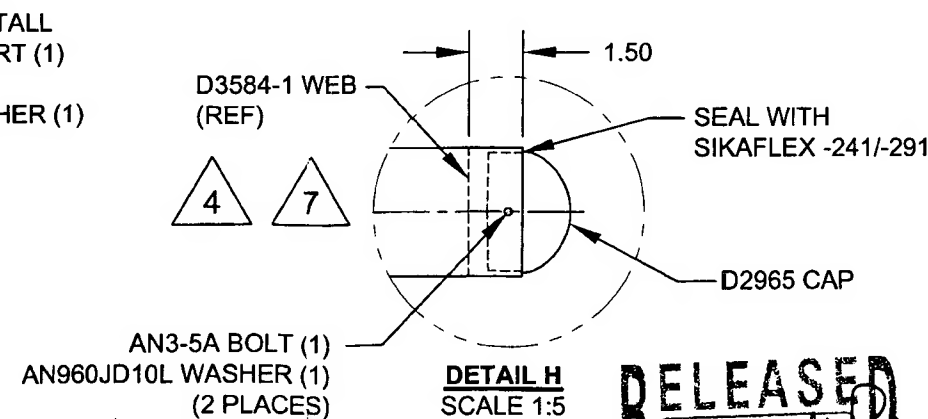
1. CHAMFER HOLE 0.030 x 45°
2. INSERT D2973 SPACER (2 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.625 DRILL TO REMOVE SPILL OVER



SECTION G-G NOTES

AFTER BENDING AND DRILLING ASSEMBLY PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D3662-1 SPACER (3 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.515 DRILL TO REMOVE SPILL OVER
5. AFTER FINISH, INSTALL D3492-053 PLUG ASSEMBLY (6 PLACES)



DETAIL H
SCALE 1:5

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DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	PH	PORT HADLOCK, WA	
CHECKED	PH	DRAWING NO.	REV. A
MFG. APPR.	PH	D3582	SHEET 2 OF 2
APPROVED	PH	TITLE	SCALE
DE APPR.	PH	BK 117 SKIDTUBE ASSEMBLY	1:20
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NO. 148

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliot
Job number: 38388A
Part number: D117 762 011
Description: Skid tube Bk117
Welding Process: Tig[☒] Mig[☐]
Base material: Aluminium
Current: AC[☒] DC[☐]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[☐]
Penetration: pass[☒] fail[☐]

UNACCEPTABLE

Cracks: pass[☒] fail[☐]
Undercut: pass[☒] fail[☐]
Pin holes: pass[☒] fail[☐]
Overlap (cold lap): pass[☒] fail[☐]
Porosity (surface): pass[☒] fail[☐]
Coloration: pass[☒] fail[☐]

Qualifier Pat. Duvall Date of Test Coupon 08-04-14

Welder Barclay Elliot Date of Test Coupon 08-04-14

The above named individual is qualified in accordance with AWS D17.1.2001 to weld